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Amendments to the Claims:

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1. (Currently amended) A method of coating a liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the liquid onto the substrate, comprising the steps of:

providing an agent-containing coating liquid;

providing a rotatable member having a liquid-holding surface, said liquid holding surface having a coating transfer region;

conveying [[the]] said coating liquid onto [[a]] said liquid-holding surface having a coating transfer region;

controlling the depth of [[the]] said coating liquid at [[the]] said coating transfer region to a predetermined depth; and

immersing the microprojections to a predetermined level in [[the]] <u>said</u> coating liquid <u>disposed</u> at [[the]] <u>said</u> coating transfer region.

Claim 2. (Currently amended) A method of coating a liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the liquid onto the substrate, comprising the steps of:

providing an agent-containing coating liquid;

providing a rotatable member having a liquid-holding surface, said liquid holding surface having a coating transfer region;

conveying [[the]] <u>said</u> coating liquid onto [[a]] <u>said</u> liquid-holding surface <u>having a</u> coating transfer region;

controlling the depth of [[the]] <u>said</u> coating liquid at [[the]] <u>said</u> coating transfer region to a predetermined depth; and

immersing the microprojections to a predetermined level in [[the]] <u>said</u> coating liquid <u>disposed</u> at [[the]] <u>said</u> coating transfer region, wherein the microprojections have a length, as measured from a surface or <u>edge</u> of the substrate, which is greater than said predetermined depth of said <u>coating liquid</u> at <u>said coating transfer region</u>.

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Claim 3. (Currently amended) A method of coating a liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the liquid onto the substrate, comprising the steps of:

providing an agent-containing coating liquid;

providing a rotatable member having a liquid-holding surface, said liquid holding surface having a coating transfer region;

conveying [[the]] said coating liquid onto [[a]] said liquid-holding surface having a coating transfer region;

controlling the depth of [[the]] <u>said</u> coating liquid at [[the]] <u>said</u> coating transfer region to a predetermined depth; and

immersing the microprojections to a predetermined level in [[the]] said coating liquid disposed at [[the]] said coating transfer region, wherein the microprojections have a length, as measured from a surface or edge of the substrate, which is greater than said predetermined depth, and wherein [[the]] said depth of [[the]] said coating liquid at [[the]] said coating transfer region is greater than said microprojection immersion level.

Claim 4. (Currently amended) A method of coating a liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the liquid onto the substrate, comprising the steps of:

providing an agent-containing coating liquid;

providing a cylindrically shaped roller having a liquid holding surface, said liquidholding surface having a coating transfer region;

conveying [[the]] <u>said</u> coating liquid onto [[a]] <u>said</u> liquid-holding surface having a coating transfer region, the liquid-holding surface being a surface of a roller;

controlling the depth of [[the]] <u>said</u> coating liquid at [[the]] <u>said</u> coating transfer region to a predetermined depth; and

immersing the microprojections to a predetermined level in [[the]] said coating liquid disposed at [[the]] said coating transfer region.

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Claim 5. (Currently amended) A method of coating a liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the liquid onto the substrate, comprising the steps of:

providing an agent-containing coating liquid;

providing a cylindrically shaped roller having a liquid holding surface, said liquidholding surface having a coating transfer region;

conveying [[the]] said coating liquid onto [[a]] said liquid-holding surface having a coating transfer region by rotating a portion of said roller through a bath of said coating liquid;

controlling the depth of the coating liquid at the coating transfer region to a predetermined depth; and

immersing the microprojections to a predetermined level in [[the]] said coating liquid disposed at [[the]] said coating transfer region, wherein the liquid holding surface is a surface of a roller, and wherein the conveying of the coating liquid is achieved by rotating a portion of the roller through a bath of the coating liquid.

Claim 6. (Currently amended) A method of coating a liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the liquid onto the substrate, comprising the steps of:

providing an agent-containing coating liquid;

providing a cylindrically shaped toller having a liquid holding surface, said liquidholding surface having a coating transfer region;

conveying [[the]] said coating liquid onto [[a]] said liquid-holding surface having a eoating transfer region by rotating a portion of said roller through a bath of said coatin liquid;

controlling the depth of [[the]] said coating liquid at [[the]] said coating transfer region to a predetermined depth by controlling the rotational speed of said roller; and

immersing the microprojections to a predetermined level in [[the]] said coating liquid disposed at [[the]] said coating transfer region, wherein the liquid-holding surface is a surface of a roller, wherein the conveying of the coating liquid is achieved by rotating a portion of the roller through a bath of the coating liquid, and wherein the depth of the coating liquid is controlled by controlling the rotational speed of the roller.

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Claim 7. (Currently amended) A method of coating a liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the liquid onto the substrate, comprising the steps of:

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providing an agent-containing coating liquid;

providing a rotatable member having a liquid-holding surface, said liquid holding surface having a coating transfer region;

conveying [[the]] said coating liquid onto [[a]] said liquid-holding surface having a coating transfer region;

controlling the depth of [[the]] said coating liquid at [[the]] said coating transfer region to a predetermined depth; and

immersing the microprojections to a predetermined level in [[the]] said coating liquid disposed at [[the]] said coating transfer region, wherein [[the]] said step of immersing of the microprojections is accomplished by conveying the substrate along a predetermined pathway adjacent [[the]] said coating transfer region.

Claim 8. (Currently amended) A method of coating a liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the liquid onto the substrate, comprising the steps of:

providing an agent-containing coating liquid;

providing a rotatable member having a liquid-holding surface, said liquid holding surface having a coating transfer region:

conveying [[the]] said coating liquid onto [[a]] said liquid-holding surface having a coating-transfer region;

controlling the depth of [[the]] said coating liquid at [[the]] said coating transfer region to a predetermined depth; and

immersing the microprojections to a predetermined level in [[the]] said coating liquid disposed at [[the]] said coating transfer region, wherein [[the]] said step of immersing of the microprojections is accomplished by continuously conveying a web comprised of a plurality of [[said]] the substrates along a predetermined pathway adjacent [[the]] said coating transfer region.

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Claim 9. (Currently amended) A method of forming a solid coating on a plurality of microprojections extending from a surface or edge of a substrate without forming a coating on the substrate, comprising the steps of;

providing an agent-containing coating liquid;

providing a rotatable member having a liquid-holding surface, said liquid holding surface having a coating transfer region;

conveying [[the]] <u>said</u> coating liquid onto [[a]] <u>said</u> liquid-holding surface having a eoating transfer region;

controlling the depth of [[the]] said coating liquid at [[the]] said coating transfer region to a predetermined depth;

immersing the microprojections to a predetermined level in [[the]] said coating liquid disposed at [[the]] said coating transfer region;

removing the microprojections from [[the]] said coating liquid; and

drying [[the]] said coating liquid coating coated on the microprojections thereby forming a solid agent-containing coating on the microprojections.

Claim 10. (Currently amended) A method of forming a solid coating on a plurality of microprojections extending from a surface or edge of a substrate without forming a coating on the substrate, comprising the steps of:

providing an agent-containing coating liquid;

providing a rotatable member having a liquid-holding surface, said liquid holding surface having a coating transfer region;

conveying [[the]] said coating liquid onto [[a]] said liquid-holding surface having a coating transfer region;

controlling the depth of [[the]] said coating liquid at [[the]] said coating transfer region to a predetermined depth;

immersing the microprojections to a predetermined level in [[the]] <u>said</u> coating liquid <u>disposed</u> at [[the]] <u>said</u> coating transfer region;

removing the microprojections from [[the]] said coating liquid; and

drying [[the]] said coating liquid easting coated on the microprojections thereby forming a solid agent-containing coating on the microprojections; and

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repeating said coating immersing, removing and drying steps to provide multiple coatings on said microprojections layers of said solid agent-containing coating.

Claim 11. (Currently amended) A method of forming a solid coating on a plurality of microprojections extending from a surface or edge of a substrate without forming a coating on the substrate, comprising the steps of:

providing an agent-containing coating liquid;

providing a rotatable member having a liquid-holding surface, said liquid holding surface having a coating transfer region;

conveying [[the]] said coating liquid onto [[a]] said liquid-holding surface having a coating transfer-region;

controlling the depth of [[the]] said coating liquid at [[the]] said coating transfer region to a predetermined depth;

immersing the microprojections to a predetermined level in [[the]] said coating liquid disposed at [[the]] said coating transfer region;

removing the microprojections from [[the]] said coating liquid; and

drying [[the]] <u>said</u> coating liquid <u>coating</u> <u>coated on</u> the microprojections thereby forming a solid agent-containing coating on the microprojections, wherein [[the]] <u>said</u> agent [[is]] <u>comprises</u> a drug or a vaccine and [[the]] <u>said</u> liquid comprises water.

Claim 12. (Currently amended) A method of forming a solid coating on a plurality of microprojections extending from a surface or edge of a substrate without forming a coating on the substrate, comprising the steps of:

providing an agent-containing coating liquid;

providing a rotatable member having a liquid-holding surface, said liquid holding surface having a coating transfer region;

conveying [[the]] <u>said</u> coating liquid onto [[a]] <u>said</u> liquid-holding surface having a <u>coating transfer region</u>;

controlling the depth of [[the]] <u>said</u> coating liquid at [[the]] <u>said</u> coating transfer region to a predetermined depth;

immersing the microprojections to a predetermined level in [[the]] <u>said</u> coating liquid <u>disposed</u> at [[the]] <u>said</u> coating transfer region;

removing the microprojections from [[the]] said coating liquid; and

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drying [[the]] said coating liquid eoating coated on the microprojections thereby forming a solid agent-containing coating on the microprojections, wherein [[the]] said coating liquid [[is]] eomprised of comprises a liquid solvent and [[the]] said agent, [[the]] wherein said coating liquid having has an agent concentration, and wherein said agent concentration is controlled by a method selected from the group consisting of [[: i)]] conducting said coating at a temperature which reduces evaporative loss of said liquid solvent [[; ii)]], conducting said coating in an atmosphere containing sufficiently high amounts of gaseous solvent to reduce evaporative loss of said liquid solvent [[; iii]], infusing liquid solvent into said coating liquid at a rate which compensates for evaporative loss of said liquid solvent[[;]], and [[iv]] combinations thereof.

Claim 13. (Currently amended) A method of forming a solid coating on a plurality of microprojections extending from a surface or edge of a substrate without forming a coating on the substrate, comprising the steps of:

providing an agent-containing coating liquid;

providing a rotatable member having a liquid-holding surface, said liquid holding surface having a coating transfer region;

conveying [[the]] said coating liquid onto [[a]] said liquid-holding surface having a coating transfer region;

controlling the depth of [[the]] said coating liquid at [[the]] said coating transfer region to a predetermined depth;

immersing the microprojections to a predetermined level in [[the]] said coating liquid disposed at [[the]] said coating transfer region;

removing the microprojections from [[the]] said coating liquid; and

drying [[the]] said coating liquid coating coated on the microprojections thereby forming a solid agent-containing coating on the microprojections, wherein [[the]] said coating liquid [[is]] comprised of comprises a liquid solvent and [[the]] said agent, [[the]] wherein said coating liquid having has an agent concentration, and wherein said agent concentration is controlled by a method selected from the group consisting of [[: i)]] conducting said coating at a temperature which reduces evaporative loss of said liquid solvent [[; ii)]], conducting said coating in an atmosphere containing sufficiently high amounts of gaseous solvent to reduce evaporative loss of said liquid solvent [[; iii)]], infusing liquid solvent into said coating liquid at a rate which compensates for evaporative loss of said liquid solvent[;], and [[iv)]] combinations thereof

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[[.]], and wherein [[the]] said liquid solvent comprises water, [[the]] said temperature is less than about 10°C, and [[the]] said atmosphere has a relative humidity greater than about 60%.

- Claim 14. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:
 - a liquid holding surface having a coating transfer region;
 - a coating liquid conveyor for providing the coating liquid at the coating transfer region;
- a coating liquid depth controller for controlling the depth of the coating liquid at the coating transfer region to a predetermined depth; and
- a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region.
- Claim 15. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:
 - a curved liquid holding surface having a coating transfer region;
 - a coating liquid conveyor for providing the coating liquid at the coating transfer region;
- a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and
- a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region.
- Claim 16. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:
- a liquid holding surface having a coating transfer region, the liquid holding surface being an outer surface of a rotatable cylindrically-shaped roller;
 - a coating liquid conveyor for providing the coating liquid at the coating transfer region;
- a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and
- a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region.

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Claim 17. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

a liquid holding surface having a coating transfer region, the liquid holding surface being an outer surface of a rotatable cylindrically-shaped roller;

a coating liquid conveyor for providing the coating liquid at the coating transfer region;

a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and

a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, wherein the coating liquid conveyor comprises rotating the roller through a bath of said coating liquid.

Claim 18. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

a liquid holding surface having a coating transfer region, the liquid holding surface being an outer surface of a rotatable cylindrically-shaped roller;

a coating liquid conveyor for providing the coating liquid at the coating transfer region;

a coating liquid depth controller comprising a doctor blade for controlling the depth of the coating at the coating transfer region to a predetermined depth; and

a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, wherein the coating liquid conveyor comprises rotating the roller through a bath of said coating liquid.

Claim 19. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

a liquid holding surface having a coating transfer region;

a coating liquid conveyor for providing the coating liquid at the coating transfer region;

a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and

a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, wherein the liquid holding

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surface is an outer surface of a rotatable cylindrically-shaped roller, wherein the coating liquid conveyor comprises rotating the roller through a bath of said coating liquid, wherein the coating liquid depth controller comprises a second roller, substantially parallel with the liquid holding surface roller and spaced a predetermined distance therefrom and forming a nip therebetween.

Claim 20. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

a liquid holding surface having a coating transfer region, the liquid holding surface being an outer surface of a rotatable cylindrically-shaped roller;

a coating liquid conveyor for providing the coating liquid at the coating transfer region; a coating liquid depth controller for controlling the depth of the coating at the coating

transfer region to a predetermined depth; and

a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, wherein the coating liquid conveyor comprises rotating the roller through a bath of said coating liquid, wherein the coating liquid depth controller comprises a second roller, substantially parallel with the liquid holding surface roller and spaced a predetermined distance therefrom and forming a nip therebetween, and wherein the two rollers rotate in the same rotational direction.

Claim 21. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

a liquid holding surface having a coating transfer region;

a coating liquid conveyor for providing the coating liquid at the coating transfer region;

a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth;

and a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, wherein the liquid holding surface is an outer surface of a rotatable cylindrically-shaped roller, wherein the coating liquid conveyor comprises rotating the roller through a bath of said coating liquid, wherein the coating liquid depth controller comprises a second roller, substantially parallel with the liquid holding

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surface roller and spaced a predetermined distance therefrom and forming a nip therebetween, including a doctor blade wiping the surface of the second roller upstream of the nip.

Claim 22. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

an immobile liquid holding surface having a coating transfer region;

- a coating liquid conveyor for providing the coating liquid at the coating transfer region;
- a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and

a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region.

Claim 23. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

an immobile liquid holding surface having a coating transfer region;

- a coating liquid conveyor for providing the coating liquid at the coating transfer region;
- a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and

a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, wherein the coating liquid conveyor causes the coating liquid to flow, by force of gravity, over the immobile liquid holding surface.

Claim 24. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

an immobile liquid holding surface having a coating transfer region;

- a coating liquid conveyor for providing the coating liquid at the coating transfer region;
- a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and
- a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, wherein the coating liquid

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conveyor causes the coating liquid to flow, by force of gravity, over the immobile coating surface, and the immobile liquid holding surface, in the coating transfer region, is substantially planar.

Claim 25. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

an immobile liquid holding surface having a coating transfer region;

a coating liquid conveyor for providing the coating liquid at the coating transfer region;

a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and

a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, wherein the coating liquid conveyor causes the coating liquid to flow, by force of gravity, over the immobile coating surface, and the immobile liquid holding surface, in the coating transfer region, is curved.

Claim 26. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

an immobile cylindrically-shaped liquid holding surface having a coating transfer region;

a coating liquid conveyor for providing the coating liquid at the coating transfer region;

a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and

a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, wherein the coating liquid conveyor causes the coating liquid to flow, by force of gravity, over the immobile liquid holding surface.

Claim 27. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

a liquid holding surface having a coating transfer region;

a coating liquid conveyor for providing the coating liquid at the coating transfer region;

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a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and

a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, wherein the substrate conveyor comprises a track which is adjustably positionable to a predetermined distance from the coating transfer region and a substrate holding sled which runs along the track.

Claim 28. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

- a liquid holding surface having a coating transfer region;
- a coating liquid conveyor for providing the coating liquid at the coating transfer region;
- a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and

a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, including a continuous substrate conveyor for continuously conveying a series of said substrates and microprojections through the coating liquid.

Claim 29. (Withdrawn) An apparatus for coating an agent-containing liquid onto a plurality of microprojections extending from a surface or edge of a substrate substantially without coating the substrate, comprising:

- a liquid holding surface having a coating transfer region;
- a coating liquid conveyor for providing the coating liquid at the coating transfer region;
- a coating liquid depth controller for controlling the depth of the coating at the coating transfer region to a predetermined depth; and
- a substrate conveyor for conveying the microprojections at a predetermined level of immersion through the coating liquid at the coating transfer region, including a continuous substrate conveyor for continuously conveying a series of said substrates and microprojections through the coating liquid, wherein the continuous substrate conveyor comprises a substrate supply roll and a substrate take-up roll.

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Applicants accordingly respectfully request examination and consideration of the subject application in view of the foregoing amendments.

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